

Table L 3 CLASSIFICATION OF CHARACTERISTICS OF ROCK
SHOWN IN LOG SHEET OF CORE BORING

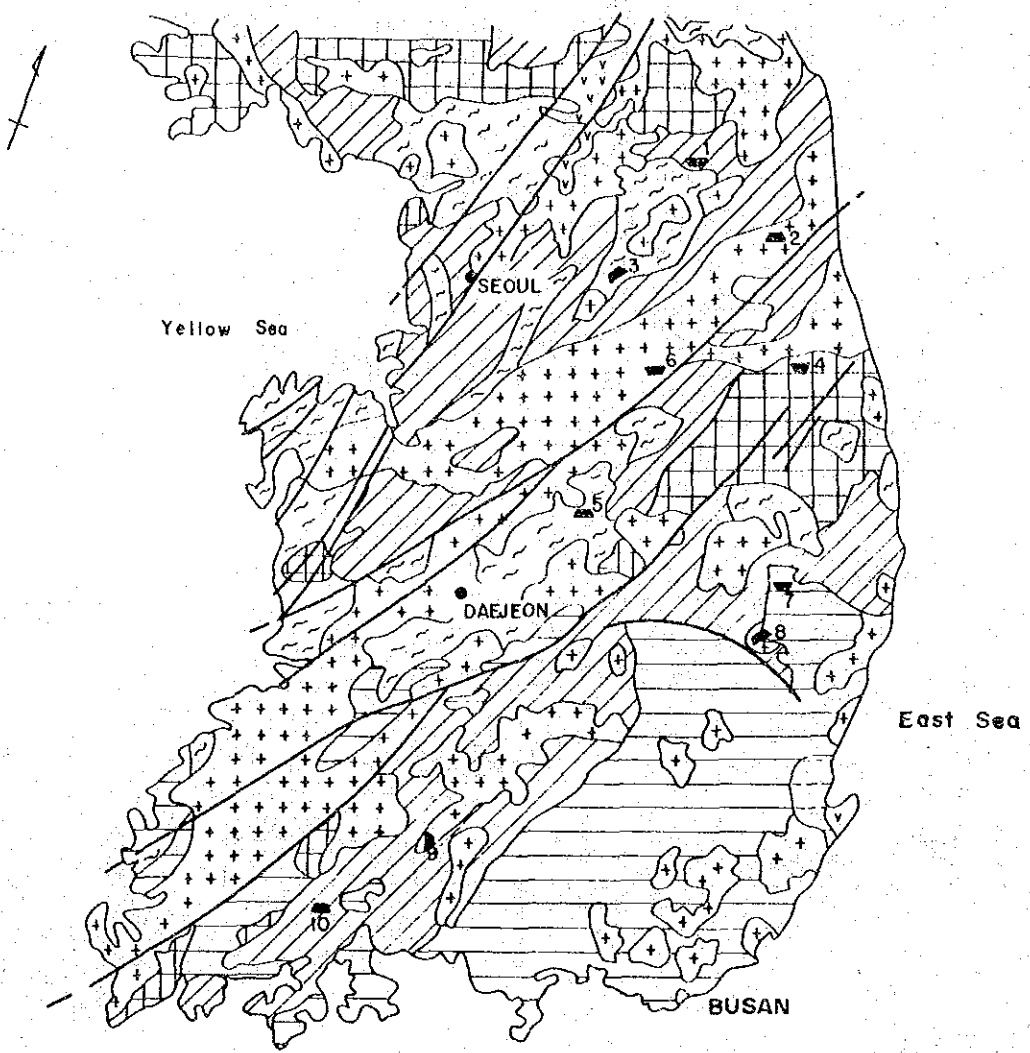
Grade	Criteria
<u>Weathering</u>	
a	The rock is very fresh, and the rock forming minerals and grains are neither weathered nor deteriorated.
b	The rock is solid. Some of cracks and joints are slightly stained, but do not contain veneer of clay or clayey materials. The rock forming minerals and grains are in parts slightly weathered and deteriorated.
c	The rock forming minerals and grains excluding quartz are slightly softened due to weathering. More of cracks and joints, sometimes rock itself, are stained by limonite etc., and some of cracks and joints are filled with veneer of clay or clayey materials.
d	The rock forming minerals and grains, excluding quartz, are fairly softened with weathering. By a light blow, it easily breaks off along cracks or joints into pieces of fragments. Some of the joints and cracks contain veneer of clay and clayey materials.
e	Owing to weathering, the rock forming minerals and grains are deteriorated and discolored. The rock is remarkably softened and loosened. In the extreme case, rock is completely decomposed and has altered its feature to that of soil or earthy materials, and sometimes roots of plant penetrate into them and also along crack and joint planes.
<u>Hardness</u>	
I	The rock is very hard, like granite and greywacke, etc. It is fresh and by a strong blow with a hammer, it breaks into sharp edged pieces or fragments with sharp fractures.
II	The rock is fairly hard, like high quality concrete. It breaks by a strong blow of a hammer into pieces to fragments with some amount of rock powder.
III	The rock is generally hard, like common concrete to whetstones. By a blow with a hammer it breaks into pieces to fragments with some amount of rock dust and powder.
IV	The rock is generally soft or weak in cementation, like chalk and tuff, etc. and easily breaks by blow with a hammer, sometimes snapped off by hands or can be whittled with a knife.
V	The rock is very soft, like lignite, and easily broken with fingers and can be scratched by a fingernail and a copper penny. Sometimes the rock varies to loose material as same as aluvial and glacial soils, owing to the loss of solidity.

Table L 3 Continued (2)

Grade	Criteria
<u>Structure</u>	
1	Cracks and joints develops in intervals of more than 30 cm apart.
2	Cracks and joints develops in intervals of 10 to 30 cm apart.
3	Cracks and joints develops in intervals of 5 to 10 cm apart.
4	Cracks and joints develops in intervals less than 5 cm apart.
5	Cracks and joints are severely occurred, the cores are broken into chips and grains.

Table L 4 REQUIRED VOLUME OF ROCK MATERIALS FOR ROCKFILL TYPE DAM

Site	Volume x 10 ³ m ³	Site	Volume x 10 ³ m ³
Bamseonggol upstream	4,544	Ganhyeon	-
Bamseonggol downstream	-	Bonghwa upstream	8,000
Inje upstream	-	Bonghwa downstream	8,000
Inje downstream	-	Imha	2,800
Hongcheon	-	Hamyang	3,200
Gujeol	1,107	Juan	3,000
Dalcheon	-		



- | | | | | |
|--|--|--|--|---------------|
| | Basalt | | Sedimentary rock of Tertiary | 1. Bamseongui |
| | Batholith and intruded igneous rock as granite, diorite etc. | | Sedimentary rock of Gyeongsang Supergroup | 2. Inje |
| | Crystalline schist | | Sedimentary rock of Daedong, Pyeongan and Joseon Supergroups | 3. Hongcheon |
| | Gneiss | | Proposed damsite | 4. Gujeol |
| | Fault | | | 5. Daicheon |
| | | | | 6. Ganhyeon |
| | | | | 7. Bonghwa |
| | | | | 8. Imha |
| | | | | 9. Hemyang |
| | | | | 10. Juam |

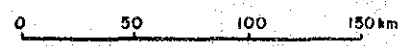
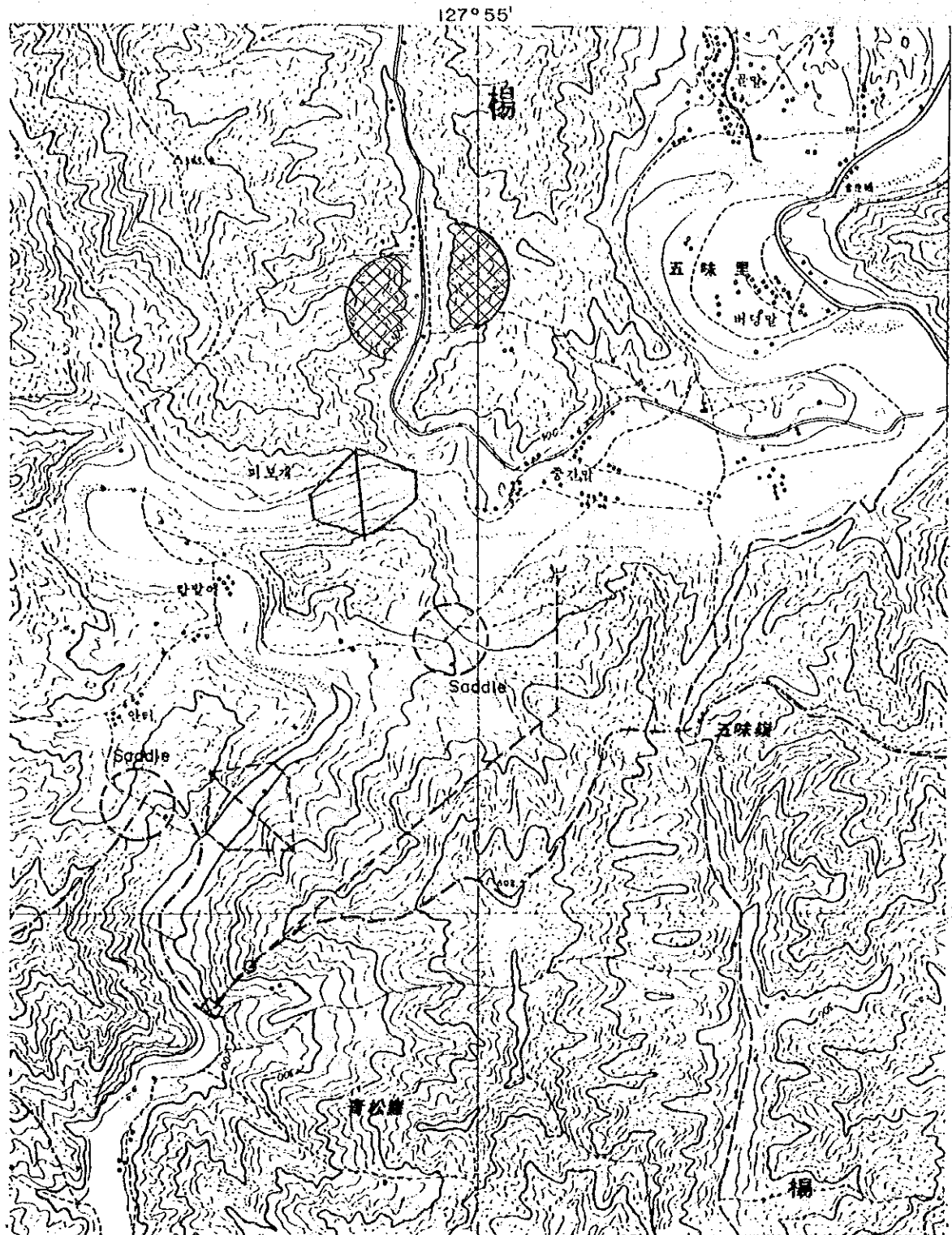


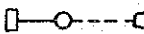



Fig. L.1 Geological Map of Korea

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-  Damsite (Upstream)
-  Damsite (Downstream)
-  Headrace tunnel, penstock and powerhouse
-  Quarry site

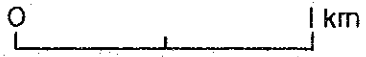


Fig. L 2
Location of Bamseonggol Sites

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128°15'



36°00'



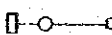

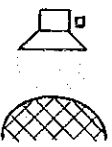
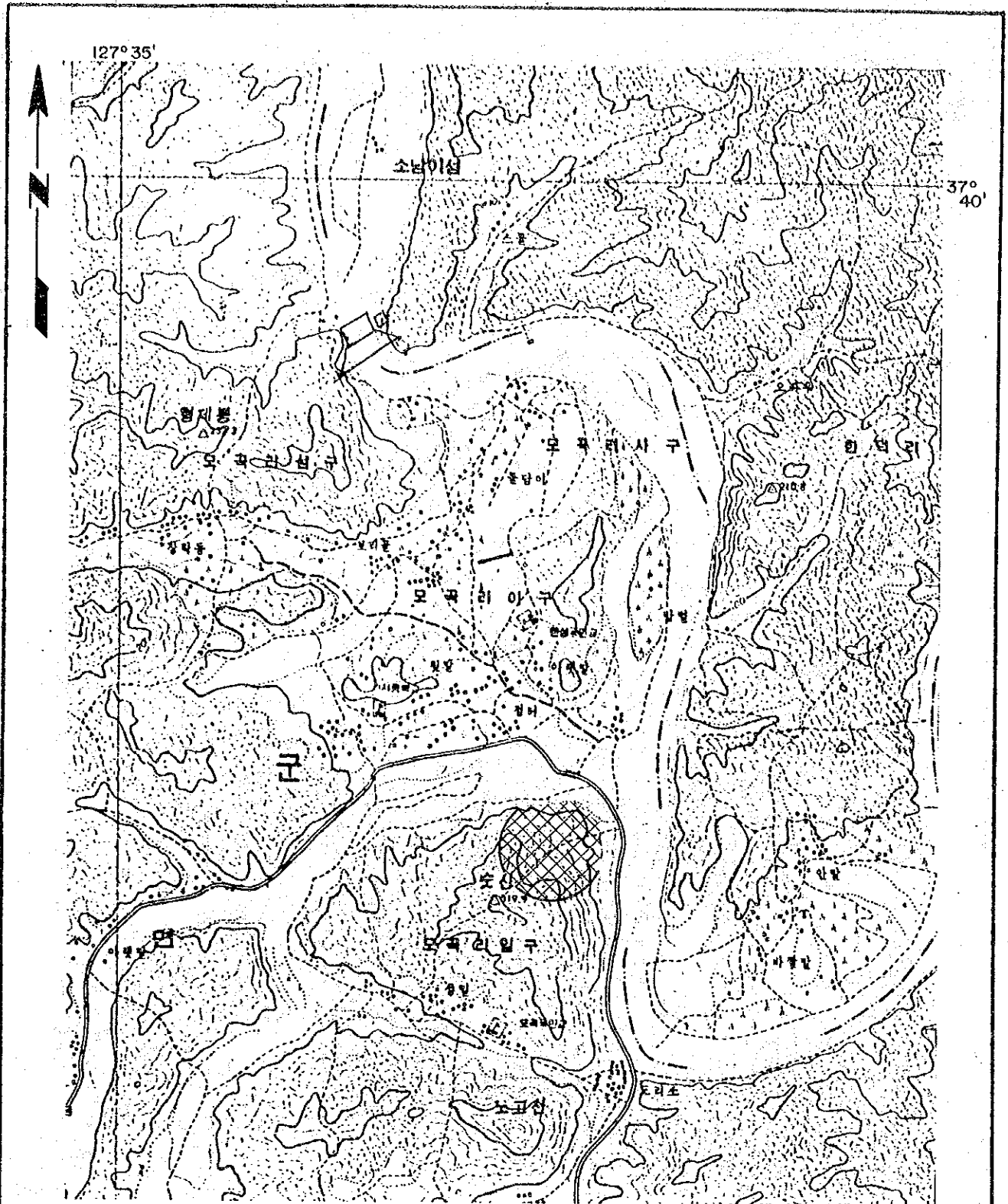
-  Damsite (Upstream)
-  Damsite (Downstream)
-  Headrace tunnel, penstock and powerhouse
-  Quarry site



Fig .L 3
Location of Inje Sites

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Dam and
powerhouse site

Quarry site

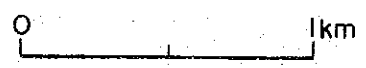
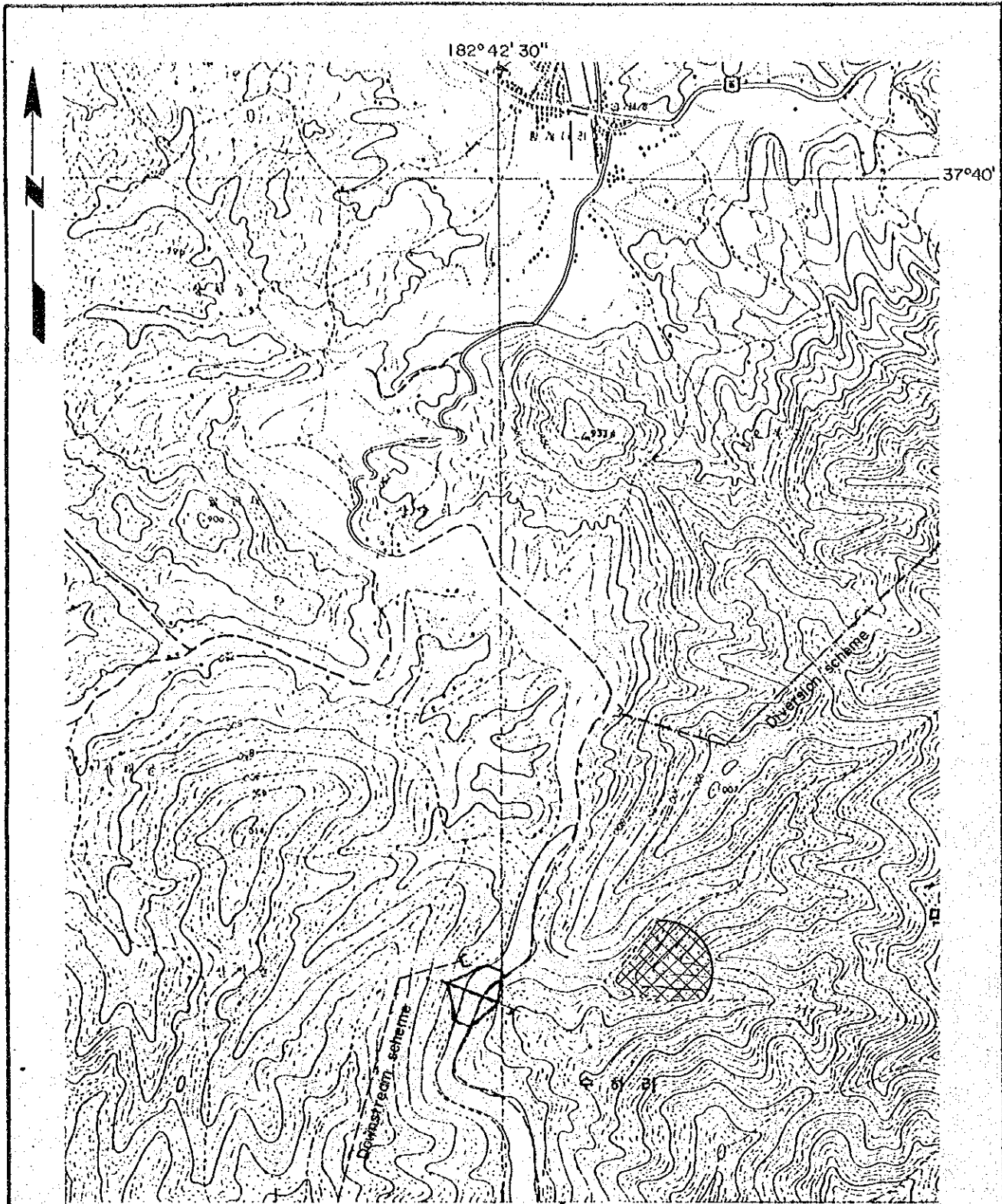

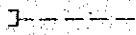



Fig. L 4
Location of Hongcheon Site

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-  Damsite
-  Headrace tunnel
-  Quarry site

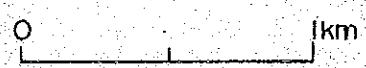
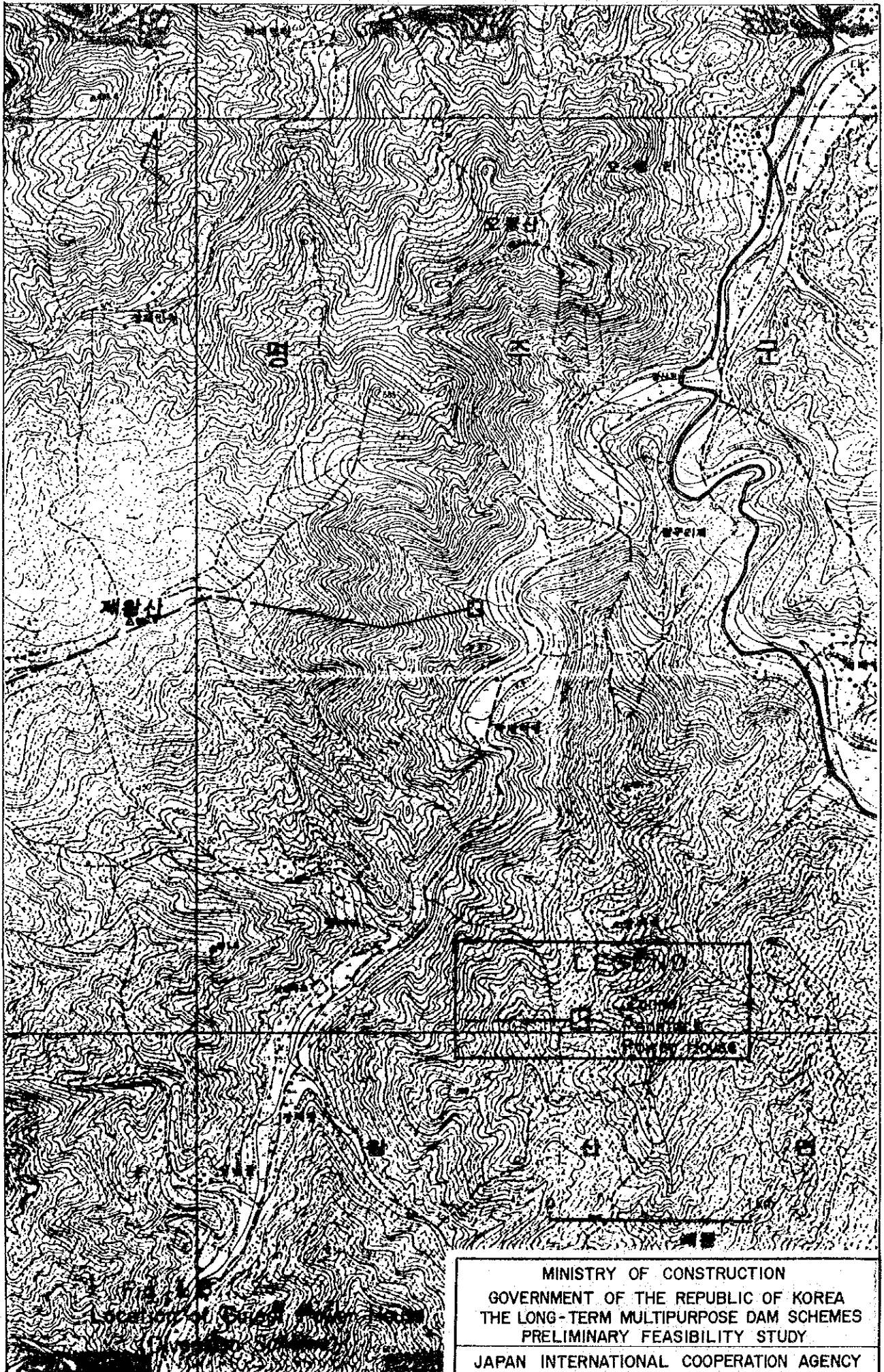
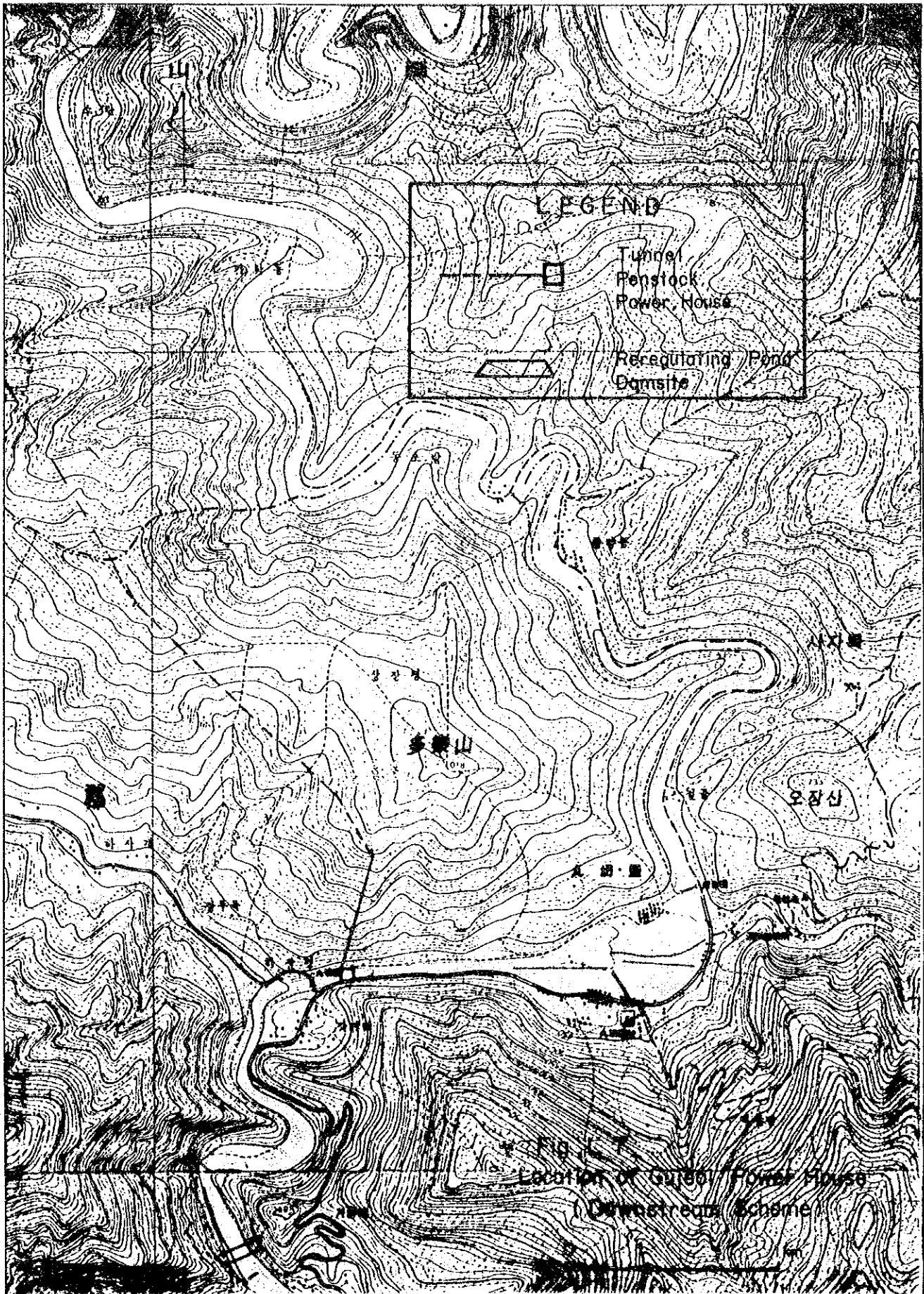


Fig. L 5
Location of Gujeol Site (I)

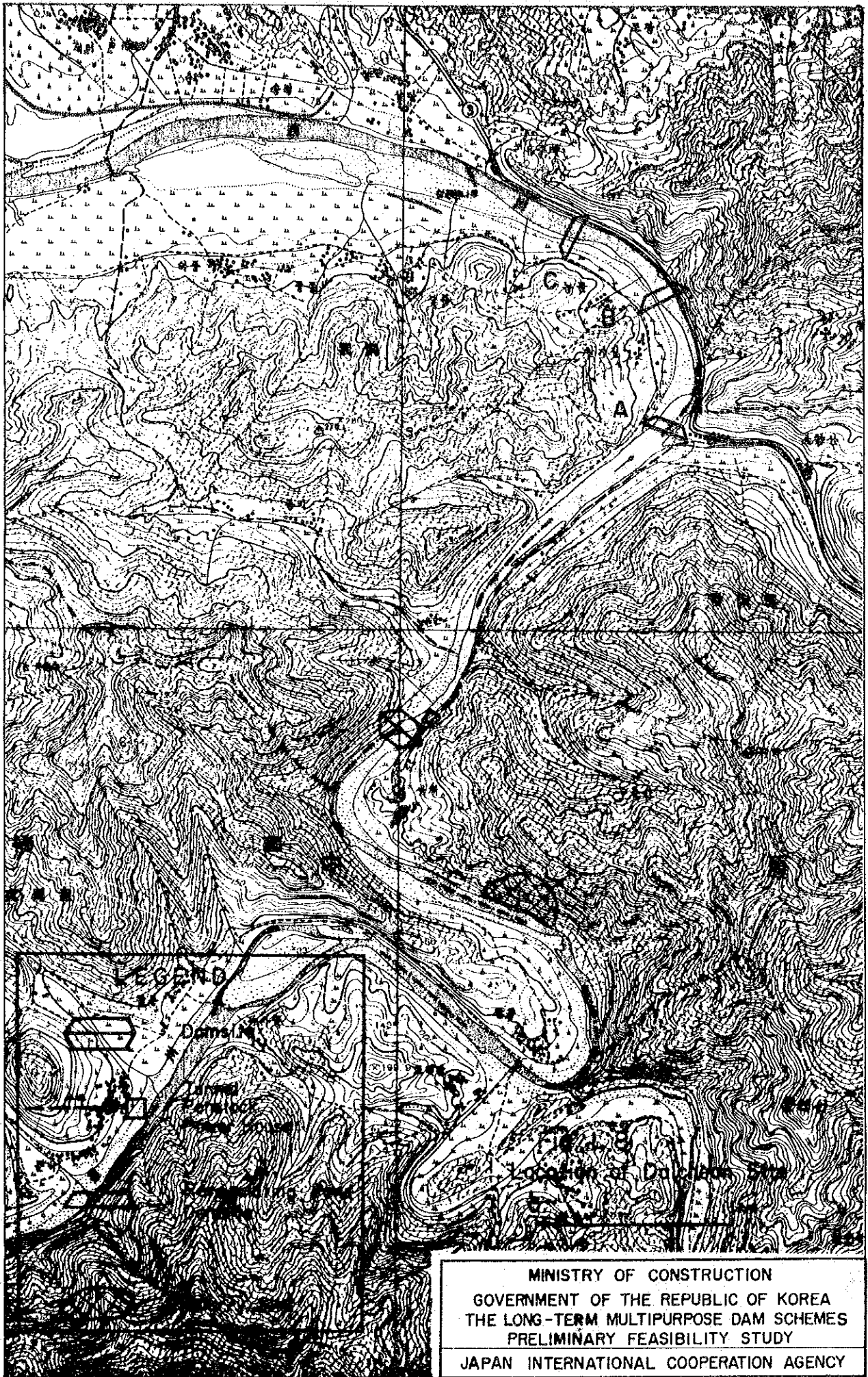
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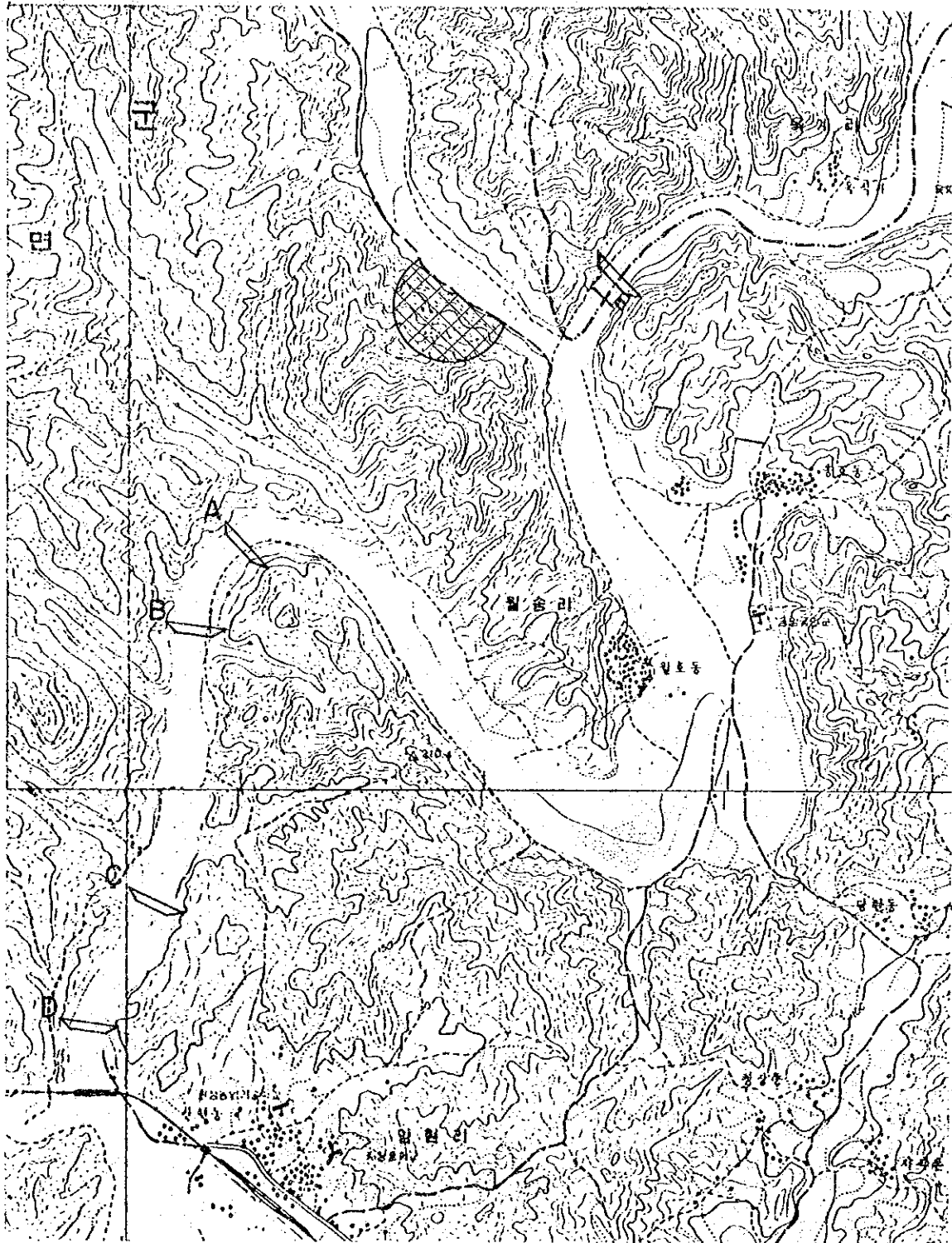
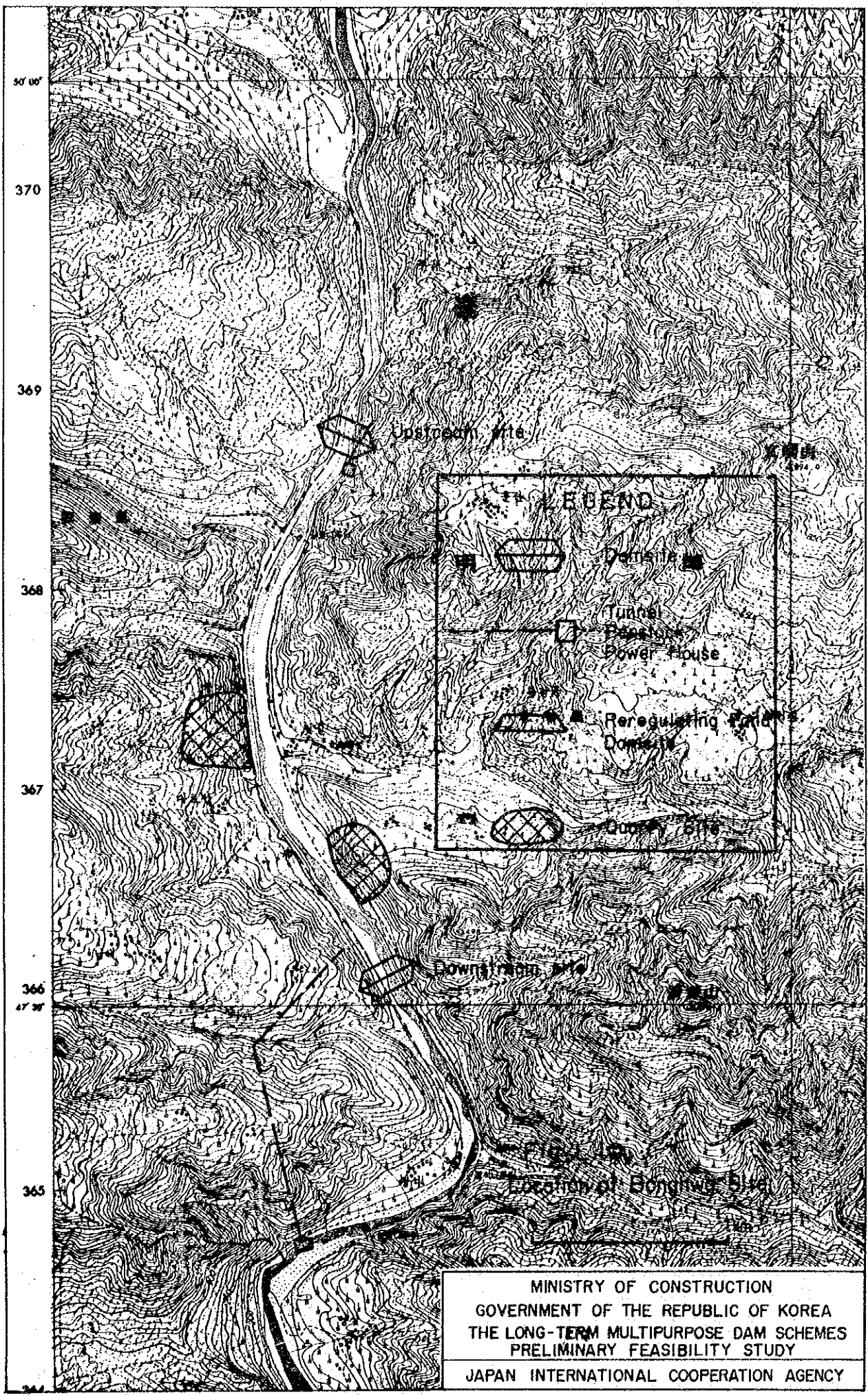


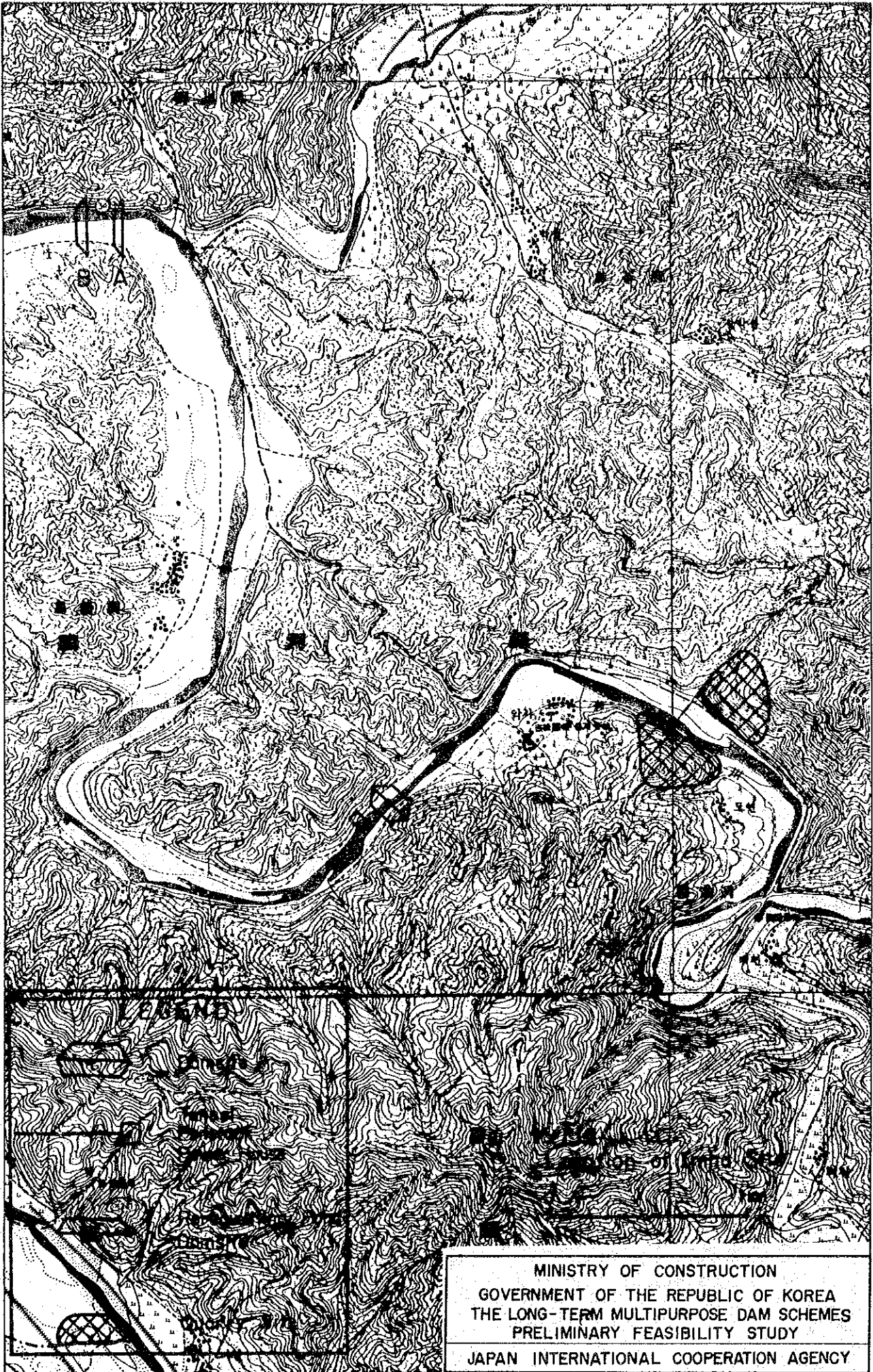
Fig. L 9
Location of Ganhyeon Site

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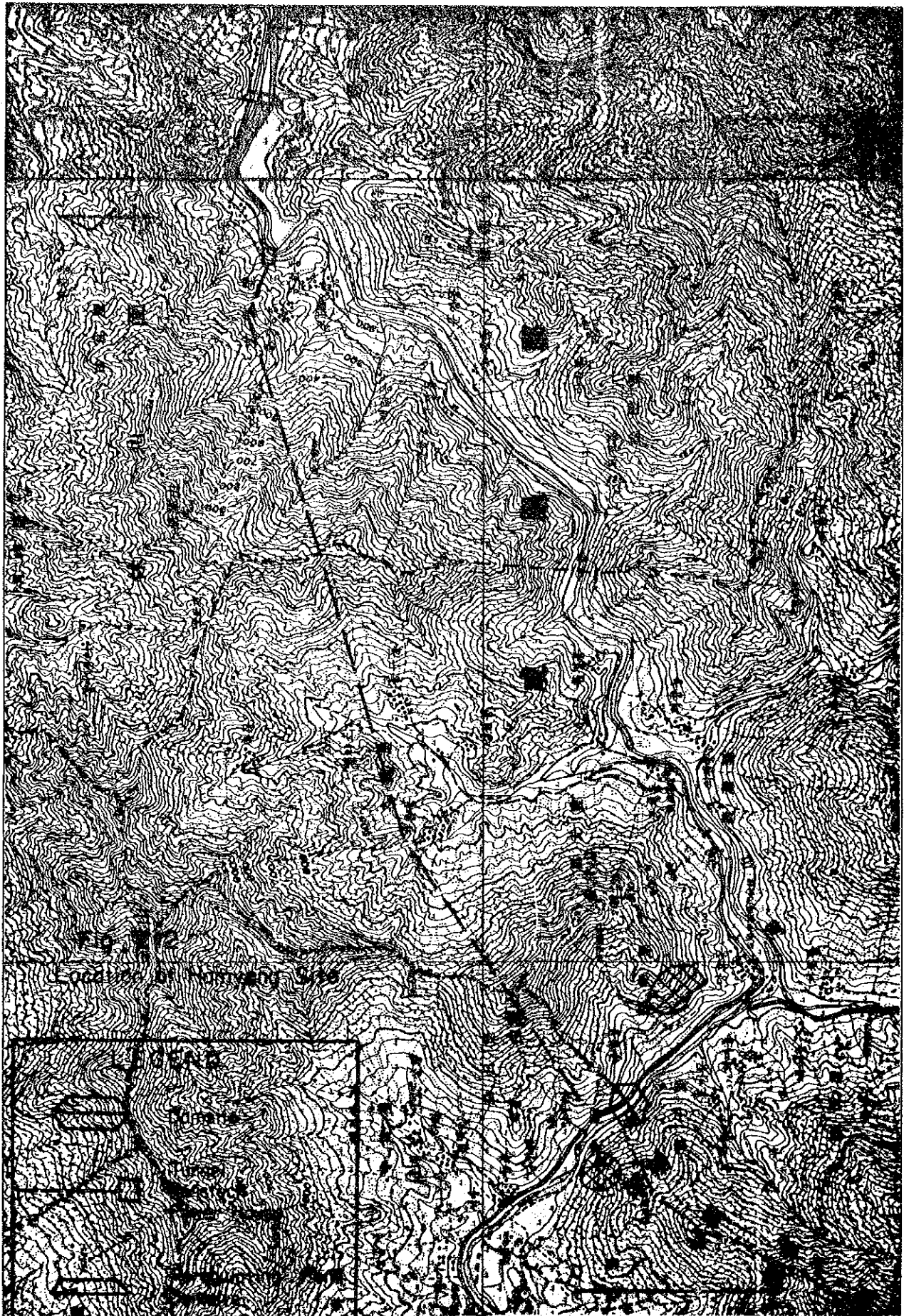
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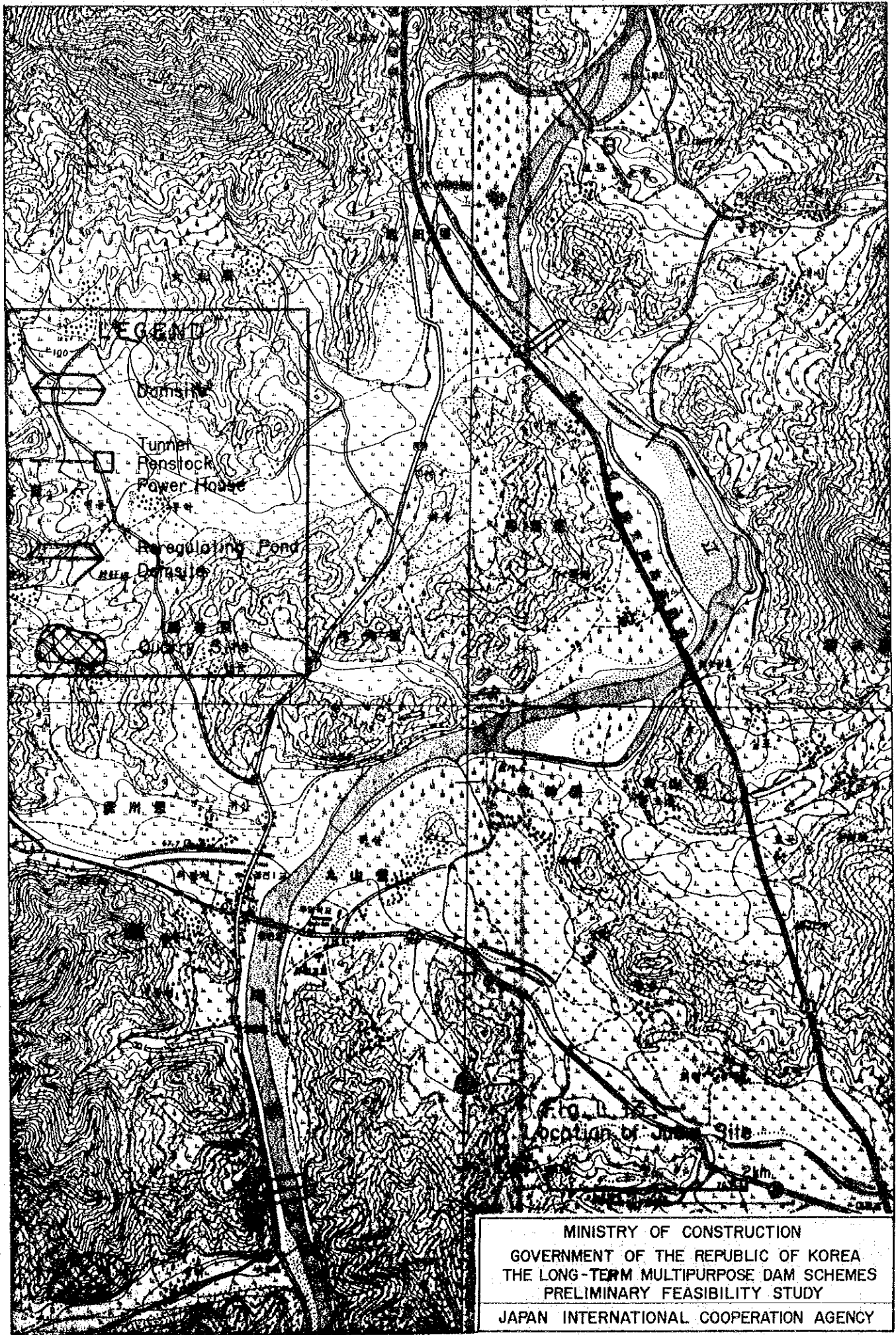
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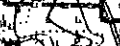


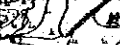
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LEGEND

-  Dam
-  Tunnel
-  Penstock
-  Power House
-  Regulating Pond
-  Debris

Location of Japan Site

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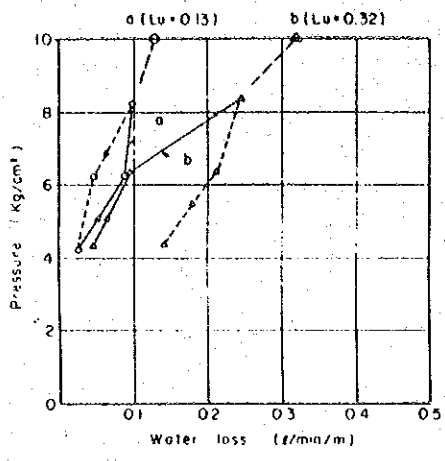


Chart - 1 Bamseonggol (Upstream) DH I. (1)

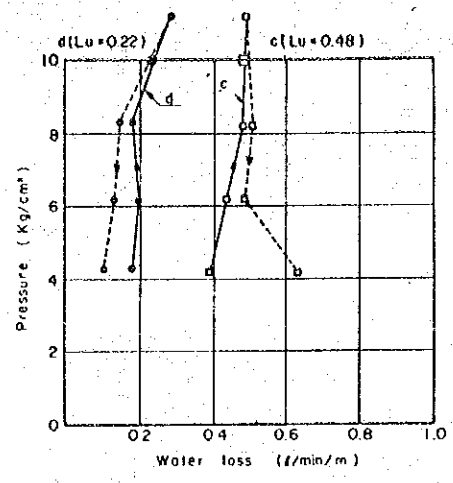


Chart - 2 Bamseonggol (Upstream) DH I. (2)

Charts - 1 and 2
 a: 19.8 - 25.3m deep
 b: 25.3 - 30.3m deep
 c: 30.2 - 35.2m deep
 d: 35.0 - 40.0m deep
 Lu: Lugeon's value

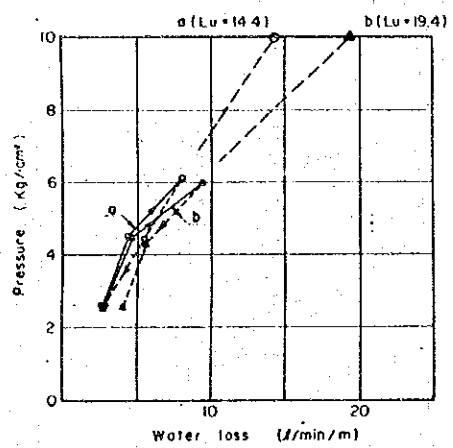


Chart - 3 Bamseonggol (Downstream) DH I. (1)

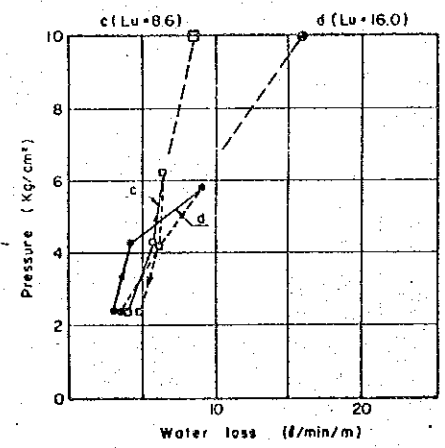


Chart - 4 Bamseonggol (Downstream) DH I. (2)

Charts-3 and 4
 a: 23.2 - 28.2m deep
 b: 28.0 - 33.0m deep
 c: 33.0 - 38.0m deep
 d: 35.0 - 40.0m deep
 Lu: Lugeon's value

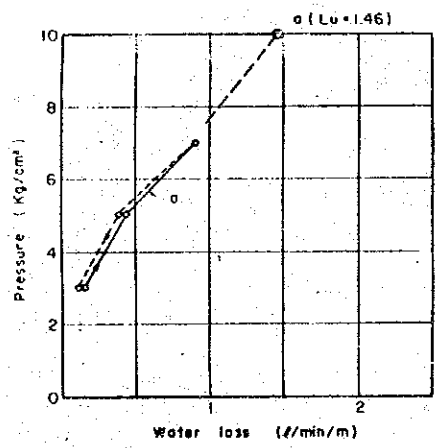


Chart - 5 Inje (Upstream) DH I. (1)

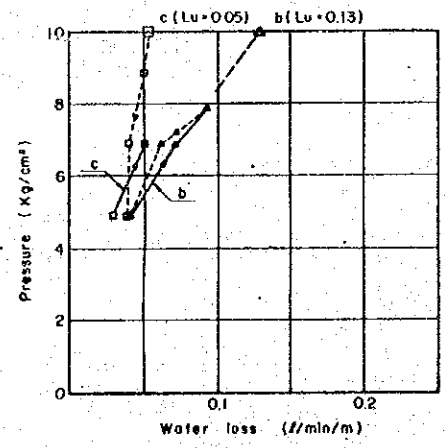


Chart - 6 Inje (Upstream) DH I. (2)

Charts - 5 and 6
 a: 16.5 - 21.5m deep
 b: 20.0 - 25.0m deep
 c: 25.0 - 30.0m deep
 Lu: Lugeon's value

Fig. L 14 Water Pressure Test in Drill Hole (1 - 6)

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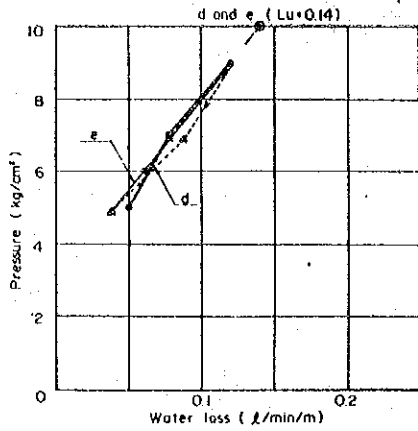


Chart -7 Inje (Upstream) DH I (3)

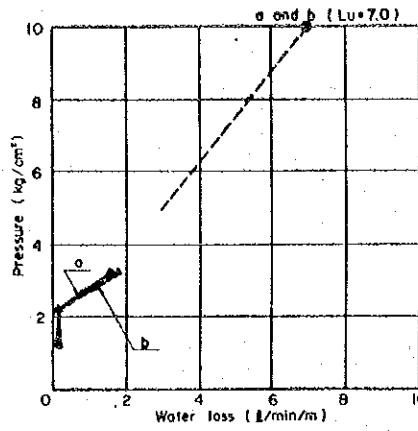


Chart -8 Hongcheon (Left bank) DH I (1)

Chart -7

d : 30.0-35.0m deep
e : 35.0-40.0m deep

Chart -8

a : 50-100m deep
b : 100-150m deep

Lu: Lugeon's value

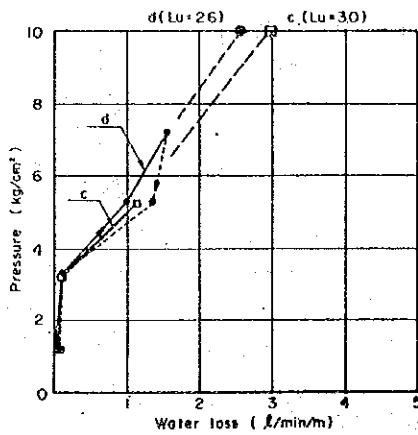


Chart -9 Hongcheon (Left bank) DH I (2)

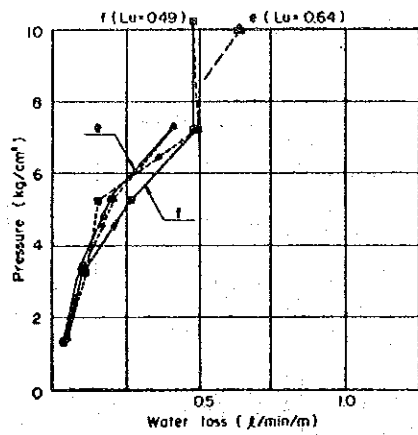


Chart -10 Hongcheon (Left bank) DH I (3)

Charts -9 and 10

c : 150-200 m deep
d : 200-250 m deep
e : 250-300 m deep
f : 300-350 m deep

Lu: Lugeon's value

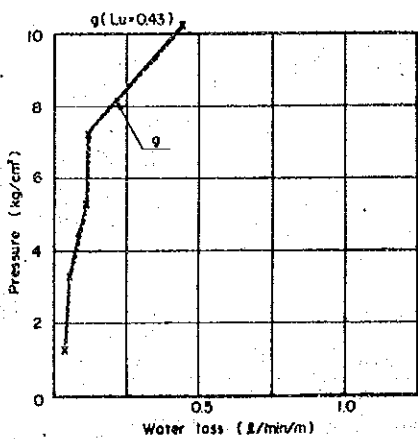


Chart -11 Hongcheon (Left bank) DH I (4)

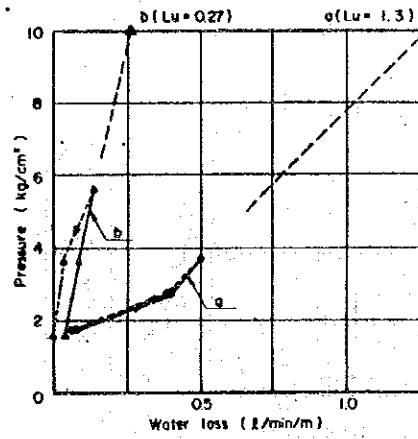


Chart -12 Hongcheon (Right bank) DH 2 (1)

Chart -11

g : 350-400m deep

Chart -12

a : 6.0-110m deep
b : 110-160m deep

Lu: Lugeon's value

Fig. L 15 Water Pressure Test in Drill Hole (2-6)

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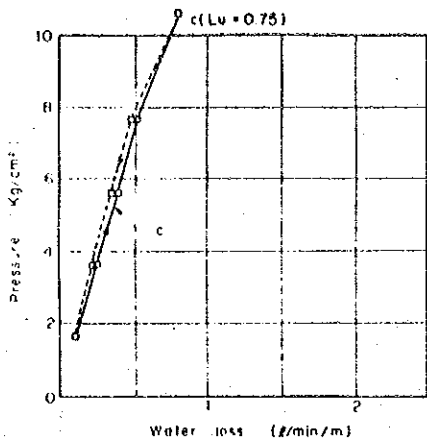


Chart -13 Hongcheon (Right bank) DH2.(2)

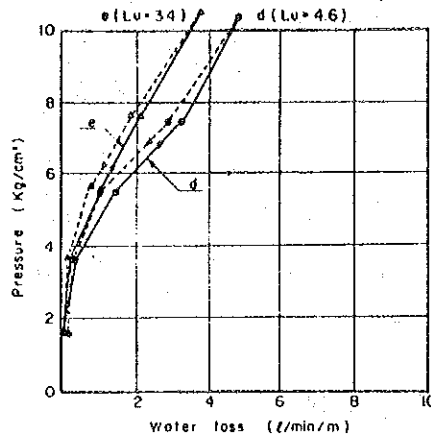


Chart -14 Hongcheon (Right bank) DH2.(3)

Charts -13 and 14

- c: 16.0 - 21.0m deep
- d: 21.0 - 26.0m deep
- e: 26.0 - 31.0m deep

Lu: Lugeon's value

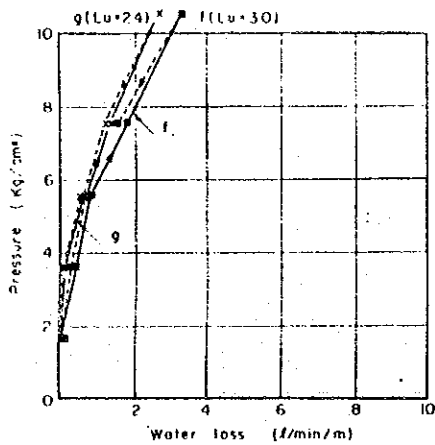


Chart -15 Hongcheon (Right bank) DH2.(4)

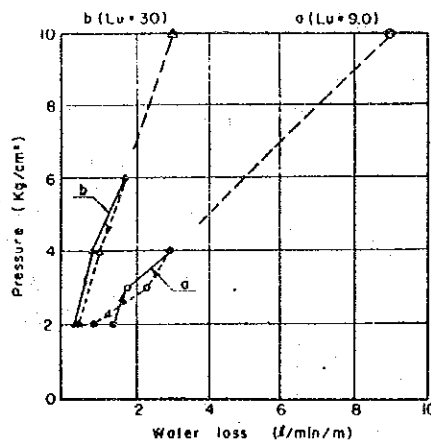


Chart -16 Gujeol DH I. (1)

Chart -15

- f: 31.0 - 36.0m deep

Chart -16

- a: 10.0 - 15.0m deep
- b: 15.0 - 20.0m deep

Lu: Lugeon's value

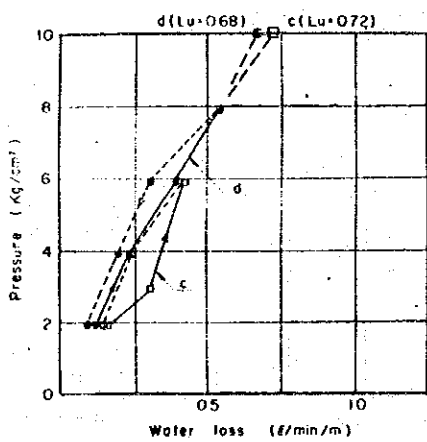


Chart -17 Gujeol DH I. (2)

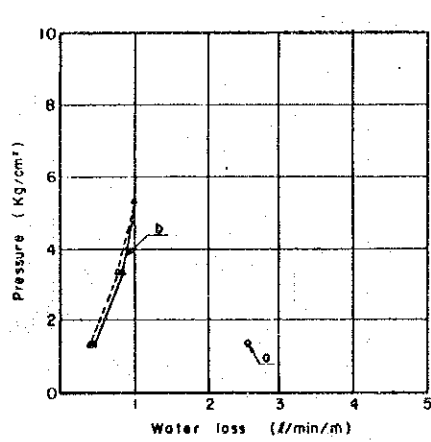


Chart -18 Dalcheon DH I. (1)

Chart -17

- c: 20.0 - 25.0m deep
- d: 25.0 - 30.0m deep

Chart -18

- a: 2.0 - 7.0m deep
- b: 7.0 - 12.0m deep

Lu: Lugeon's value

Fig.L 16 Water Pressure Test in Drill Hole (3-6)

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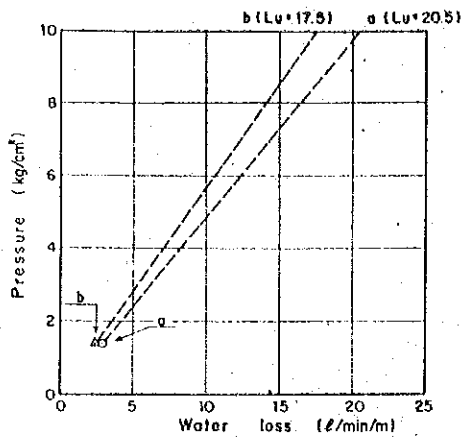


Chart -19 Dalcheon DH1 (2)

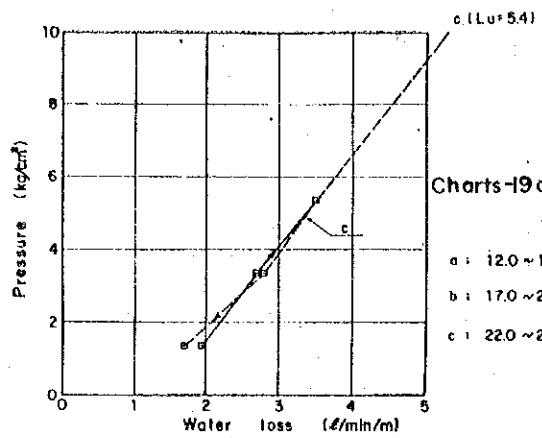


Chart -20 Dalcheon DH1 (3)

Charts-19 and 20
 a : 12.0 ~ 17.0 m deep
 b : 17.0 ~ 22.0 m deep
 c : 22.0 ~ 27.0 m deep

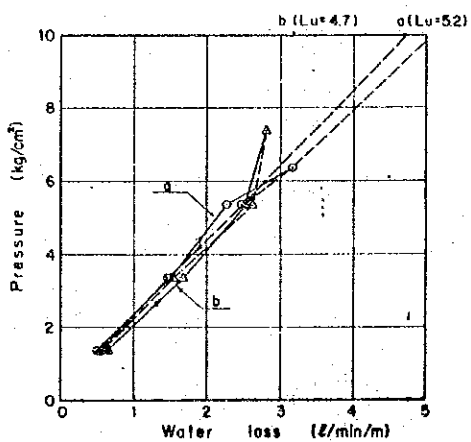


Chart -21 Dalcheon DH1 (4)

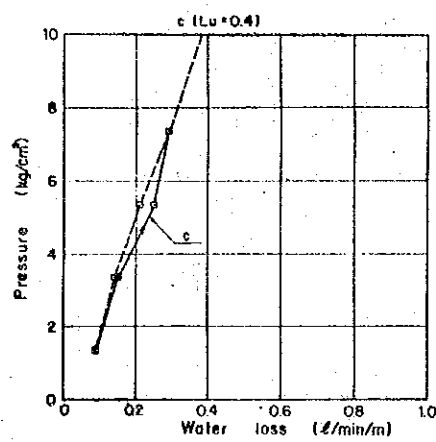


Chart -22 Dalcheon DH1 (5)

Charts-21 and 22
 a : 27.0 ~ 32.0 m deep
 b : 32.0 ~ 37.0 m deep
 c : 37.0 ~ 40.0 m deep

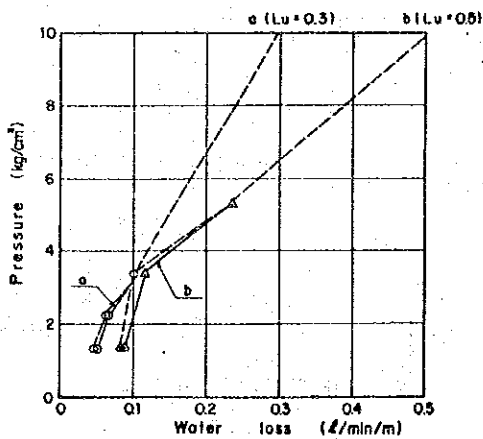


Chart -23 Ganhyeon DH1 (1)

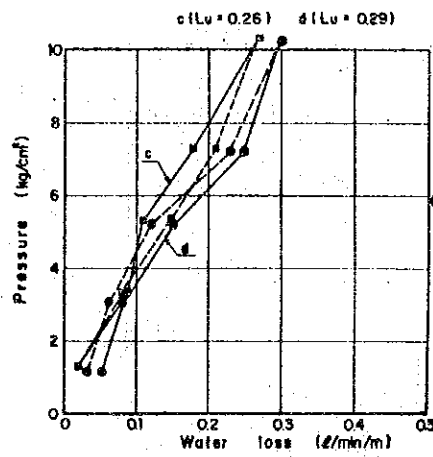


Chart -24 Ganhyeon DH1 (2)

Charts-23 and 24
 a : 0.7 ~ 5.3 m deep
 b : 5.0 ~ 10.0 m deep
 c : 10.0 ~ 15.0 m deep
 d : 15.0 ~ 20.0 m deep

Fig. L 17 Water Pressure Test in Drill Hole (4 - 6)

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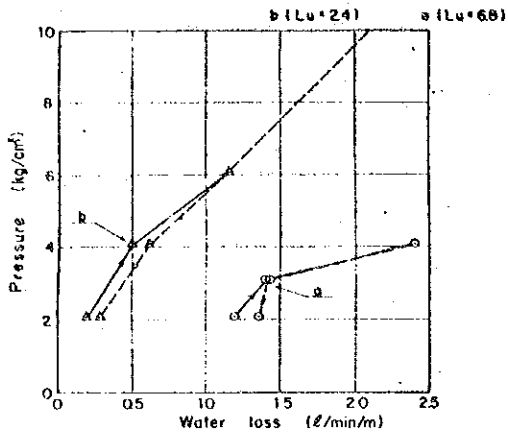


Chart -25 Bongwha DH2 (1)

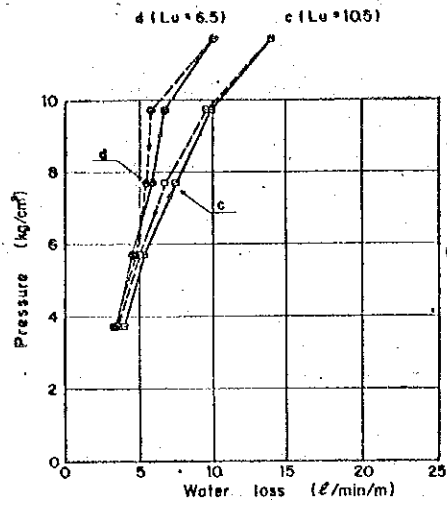


Chart -26 Bongwha DH2 (2)

Charts-25 and 26

- a : 12.0 ~ 17.0 m deep
- b : 17.0 ~ 22.0 m deep
- c : 24.0 ~ 29.0 m deep
- d : 29.0 ~ 34.5 m deep

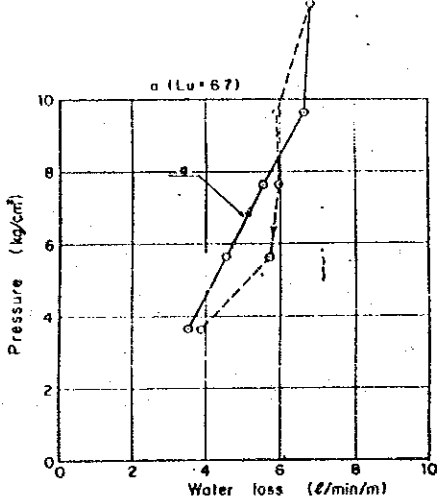


Chart -27 Bongwha DH2 (3)

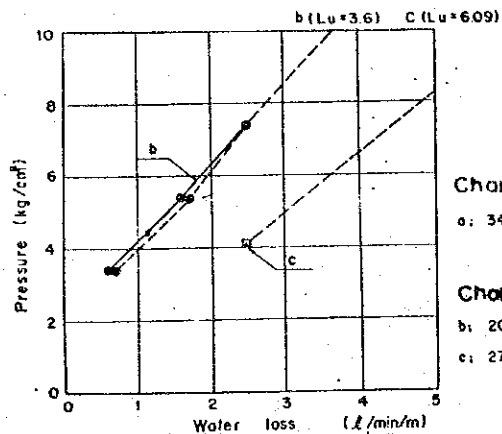


Chart -28 Imho DH1 (1)

Chart -27

- a : 34.5 ~ 40.0 m deep

Chart -28

- b : 20.0 ~ 25.0 m deep
- c : 27.0 ~ 32.0 m deep

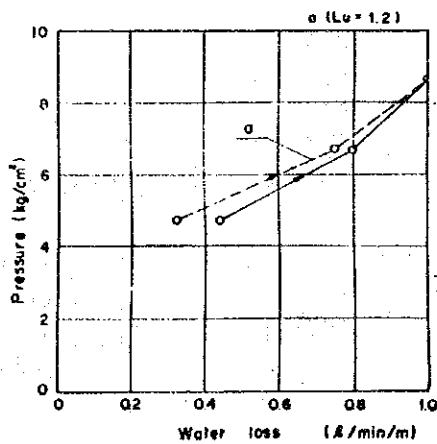


Chart -29 Imho DH1 (2)

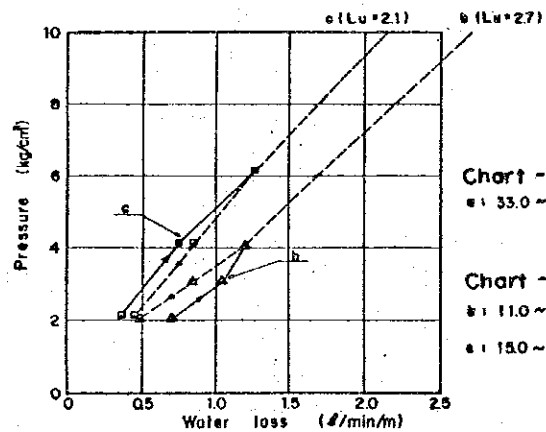


Chart -30 Homyang DH1 (1)

Chart -29

- a : 33.0 ~ 38.0 m deep

Chart -30

- b : 11.0 ~ 16.0 m deep
- a : 18.0 ~ 20.0 m deep

Fig. L 18 Water Pressure Test in Drill Hole (5 - 6)

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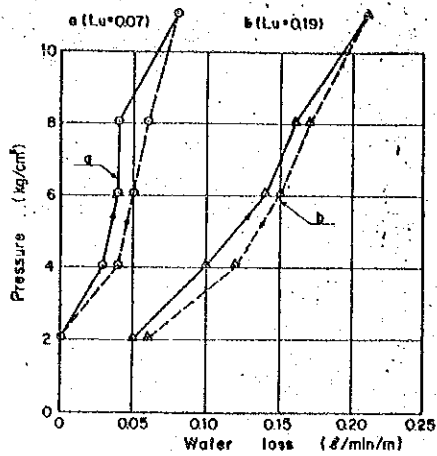


Chart -31 Hamyang DH1 (2)

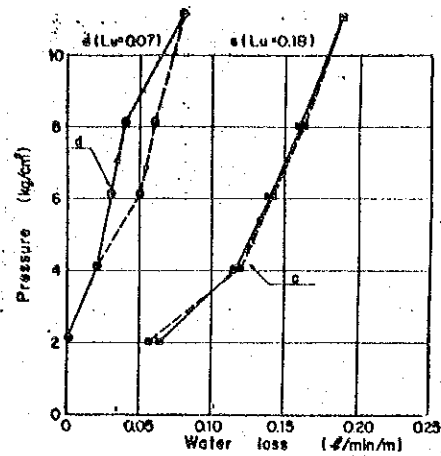


Chart -32 Hamyang DH1 (3)

Charts
31 and 32

- a : 20.0 ~ 25.0 m deep
- b : 25.0 ~ 30.0 m deep
- c : 30.0 ~ 35.0 m deep
- d : 35.0 ~ 40.0 m deep

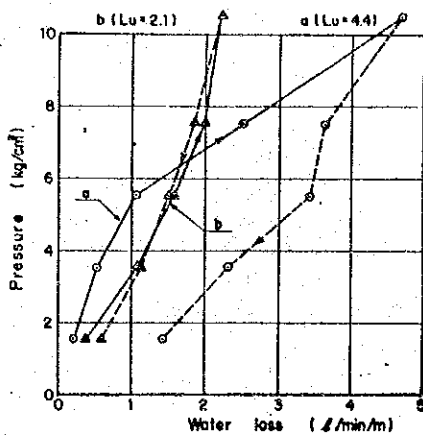


Chart -33 JUAM DH1 (1)

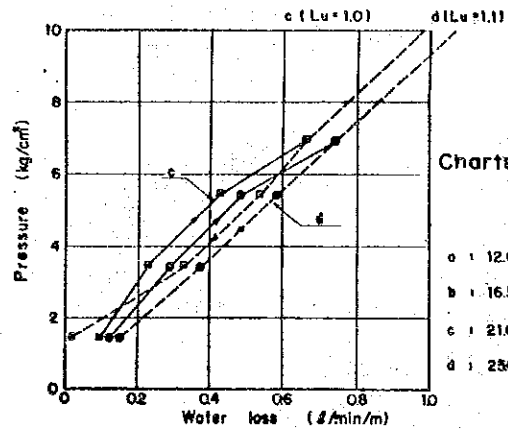


Chart -34 JUAM DH1 (2)

Charts
33 and 34

- a : 12.0 ~ 17.0 m deep
- b : 16.5 ~ 21.5 m deep
- c : 21.0 ~ 26.0 m deep
- d : 25.0 ~ 30.0 m deep

Fig. L 19 Water Pressure Test In Drill Hole (6-6)

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